



NEBRASKA INFORMATION TECHNOLOGY COMMISSION

STANDARDS AND GUIDELINES

Contracting Guidelines for Upgrade of Distance Learning Services

Category	Network Architecture
Title	Contracting Guidelines for Upgrade of Distance Learning Services
Number	
Applicability	<div><input type="checkbox"/> State Government Agencies <input type="checkbox"/> All.....Not Applicable <input type="checkbox"/> ExcludingNot Applicable <input checked="" type="checkbox"/> State Funded Entities - All entities receiving state funding for matters covered by this document.....Guideline <input checked="" type="checkbox"/> Other: Distance Learning Consortia and affiliated partners.....Guideline</div> <div>Definitions: Standard - Adherence is required. Certain exceptions and conditions may appear in this document, all other deviations from the standard require prior approval of _____. Guideline - Adherence is voluntary.</div>
Status	<input checked="" type="checkbox"/> Adopted <input type="checkbox"/> Draft <input type="checkbox"/> Other: _____
Dates	Date: November 12, 2003 Date Adopted by NITC: November 13, 2003 Other:

1.0 Guidelines

Entities that receive state funding for telecommunications and public entities that are approaching contract expiration for existing distance learning services are advised to make every attempt to take advantage of the NITC efforts to aggregate services and contracts. As new contracts are contemplated for distance learning, it is recommended that discussions minimally include consideration of the following:

1.1 Contracting Options

A) To negotiate one contract for connective terminal hardware and transport as long as the end-user has full access to and flexible use of all bandwidth on the network and has the ability to upgrade video encoding equipment as desired; or B) negotiate two contracts at the local level; one contract for procurement (including maintenance) of connective terminal hardware (CODEC) and a second contract for transport (preferably the use of *Network Nebraska*);

1.2 Contract Expiration Dates

To the extent possible, the local entity should make transport contract expiration dates co-terminus with the *Network Nebraska* core transport contracts (contact the DAS-Division of Communications for more information).

2.0 Purpose and Objectives

The purpose of this guideline is to make the contracted services portion of distance learning contracts more flexible for the end-user and the provider and better able to accommodate future technology applications.

2.1 Background

Approximately 297 school districts joined together during the years 1996-2002 to form 11 separate interlocal agreements for the purposes of applying for and receiving lottery and Federal funds for interactive distance learning as served by telephone companies over DS-3 (45 megabit) circuits, or cable-based interconnected systems. Many of these consortia agreed to long-term video service contracts (10 years) broken up into two and four year increments. These same high school participants and Educational Service Units also negotiated for one or two T-1 (1.544 megabit) data circuits over the same DS-3s for Internet access. The video compression technologies implemented at the time were JPEG (Joint Photographic Experts Group) that delivered near-broadcast quality at approximately 8 megabits per video channel or analog video. [Most recently, the cable-based analog systems have upgraded to digital video compression over 100 megabit, flexibly provisioned circuits and two DS-3 distance learning consortia have upgraded to MPEG2 video and audio].

In 2001, the major supplier of the JPEG Codecs (coder-decoder) announced that this equipment would no longer be manufactured. Telecommunications providers responded that they would continue to support the JPEG video services for the life of the existing contracts. However, it became apparent that the JPEG video standard equipment would have to be replaced sometime in the future.

In 2002, the Nebraska Legislature authorized \$3 million in lottery funds to be used for the Distance Education Network Completion grants that affected 45 high schools throughout the State. The Legislation stipulated that these schools were to become part of existing consortia using existing technology. As these original agreements come to the end of their

service period (2006-2012), it is in the mutual best interest of the provider and end-user that this technology be replaced and the contract terms be modernized as soon as possible.

2.2 Objective

The objective of this guideline is to permit users to access all the bandwidth on the negotiated circuit. It will allow providers to continue service and to expand networks as required by updating the systems they use to NEBS (Network Equipment Building System) standard compatible equipment. It will allow interoperability between users among multiple consortia. It will permit new telecommunications services on the DS-3 connections in use and permit increased speeds on current services such as access to the Internet.

3.0 Definitions

3.1 CODEC

A device that encodes video and audio into data and decodes data into video and audio. CODEC stands for coder/decoder.

3.2 Interlocal agreement

An official written agreement between two or more publicly funded entities.

3.3 T-1

A data circuit that provides throughput of 1.544 Mbps.

3.4 DS-3

A data circuit that provides throughput of 45 Mbps.

4.0 Applicability

4.1 State Funded Entities

Entities that are not State agencies but receive State funding for telecommunications (i.e. Legislative appropriations, Education Innovation Fund, Nebraska Universal Service Fund, ESU Core Services, Infrastructure Fund, etc.) are encouraged to follow this guideline.

4.2 Other Entities

Entities that are neither State agencies nor state-funded entities but choose to use the State-funded *Network Nebraska* for purposes of transmitting or exchanging synchronous video are encouraged to follow this guideline.

5.0 Responsibility

5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. (N.R.S. 86-516 §6)

6.0 Related Documents

6.1 Video and Audio Compression Standard for Synchronous Distance Learning and Videoconferencing (http://www.nitc.state.ne.us/standards/video/video_standard.pdf)

6.2 IP Communication Protocol Standard for Synchronous Distance Learning and Videoconferencing (draft)